APPEAL BRIEF UNDER 37 C.F.R. § 41.37

TABLE OF CONTENTS

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Ramakrishna S. Budampati	Examiner: Amancio Gonzalez
Serial No.: 10/800,482	Group Art Unit: 2617
Filed: March 15, 2004	Docket: H0005509.65415

For: REDUNDANT WIRELESS NODE NETWORK WITH COORDINATED RECEIVER DIVERISTY

APPEAL BRIEF UNDER 37 CFR § 41.37

Mail Stop Appeal Brief- Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Appeal Brief is presented in support of the Notice of Appeal to the Board of Patent Appeals and Interferences, filed on November 29, 2007, from the Final Rejection of claims 1-23 of the above-identified application, as set forth in the Final Office Action mailed on June 29, 2007.

The Commissioner of Patents and Trademarks is hereby authorized to charge Deposit Account No. 19-0743 in the amount of $510.00 which represents the requisite fee set forth in 37 C.F.R. § 41.20(b)(2). The Appellant respectfully requests consideration and reversal of the Examiner's rejections of the appealed claims.

1. REAL PARTY IN INTEREST

The real party in interest of the above-captioned patent application is the assignee, HONEYWELL INTERNATIONAL INC.

2. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant that will have a bearing on the Board's decision in the present appeal.

3. STATUS OF THE CLAIMS

The present application was filed on March 15, 2004 with claims 1-23. A non-final Office Action rejecting claims 1-23 was mailed on February 6, 2007. A Final Office Action (hereinafter "the Final Office Action") maintaining the rejection of claims 1-23 was mailed on June 29, 2007. Claims 1, 10, 16, 17, 18, and 19 stand twice rejected, remain pending, and are the subject of the present Appeal.

4. STATUS OF AMENDMENTS

No amendments have been made subsequent to the Final Office Action dated June 29, 2007.

5. SUMMARY OF CLAIMED SUBJECT MATTER

Aspects of the present inventive subject matter include, but are not limited to, a redundant wireless node network with coordinated receiver diversity.

Independent Claim 1

In an embodiment, as recited in independent claim 1, a wireless network (FIG. 1, No. 100) includes multiple first wireless nodes that transmit signals (p. 1, line 23, ¶ 3; FIG. 1, Nos. 140, 142, 144, 146, 148, 150, 152, and 154). The network also includes multiple independent infrastructure nodes (p. 3, lines 28-30, ¶ 14; FIG. 1, Nos. 110, 112, 114, 116, 118, 120, 122, 124, and 126) that receive the transmitted signals, wherein at least two infrastructure nodes receive a transmitted signal from a single first wireless node (p. 4, lines 16-17; ¶ 16). The network further includes a module that combines at least two of the signals received at the multiple independent infrastructure nodes to estimate the signal transmitted by the single first wireless node (p.5, lines 27-28, ¶ 21; p. 6, lines 21-22, ¶ 24; FIG. 1, Nos. 135, 110, 112, 114, 116, 118, 120, 122, 124, and 126).

Independent Claim 10

In another embodiment, as recited in independent claim 10, an infrastructure node (p. 3, lines 28-30, ¶ 14; FIG. 1, Nos. 110, 114, 116, 118, 120, 122, 124, and 126) for a wireless network (FIG. 1, No. 100) includes a first receiver (p. 5, lines 17-19, ¶ 20; FIG. 3, No. 320) that receives a transmitted signal from a wireless node (p. 5, lines 17-19, ¶ 20; FIG. 3, No. 310). The infrastructure node further includes a second receiver that receives signals from other independent infrastructure nodes representative of the transmitted signal from the wireless node that were received by the other independent infrastructure nodes (p. 6, lines 21-27, ¶ 24; FIG. 4, Nos. 410, 420, 430). The infrastructure node also includes a module that combines the signal received from the wireless node and the signals from the other independent infrastructure nodes to estimate the signal transmitted by the wireless node (p. 5, lines 27-28; p. 6, lines 22-24, ¶ 24; FIG. 4, Nos. 410, 420, 430).

Independent Claim 16

In another embodiment, as recited in independent claim 16, an infrastructure node (p. 3, lines 28-30, ¶ 14; FIG. 1, Nos. 110, 112, 114, 116, 118, 120, 122, 124, and 126) for a wireless network (FIG. 1, No. 100) includes a means for receiving a transmitted signal from a wireless node (p. 3, lines 28-30, ¶ 14; FIG. 1, Nos. 110, 112, 114, 116, 118, 120, 122, 124, and 126). The infrastructure node also includes a means for receiving the signals from other independent infrastructure nodes representative of the transmitted signal from the wireless node (p. 4, lines 16-17, ¶ 16; FIG. 4, Nos. 410, 420, 430). The infrastructure node further includes a means for combining the signal received from the wireless node and the signals from the other independent infrastructure nodes to estimate the signal transmitted by the wireless node (p. 5, lines 27-28, ¶ 21; p. 6, lines 6-22, ¶¶ 22, 23, and 24; FIG. 1, Nos. 135, 110, 112, 114, 116, 118, 120, 122, 124, and 126).

Independent Claim 17

In another embodiment, as recited in independent claim 17, a wireless network (FIG. 1, No. 100; FIG. 2, No. 200) includes a means for transmitting low power wireless signals (p. 1, lines 9-10; p. 4, lines 29-30, ¶ 18; p. 5, line 1, ¶ 18; FIG. 2, Nos. 210, 220). The wireless network also includes multiple means for receiving the transmitted signals, wherein at least two of such means receive a transmitted signal from a single first wireless node (p. 3, lines 28-30, ¶ 14; FIG. 1, Nos. 110, 112, 114, 116, 118, 120, 122, 124, and 126; p. 4, lines 16-17, ¶ 16). The wireless network further includes a means for combining at least two of the signals received at the multiple means for receiving the transmitted signals for estimating the signal transmitted by the single first wireless node (p. 5, lines 27-28, ¶ 21; p. 6, lines 6-22, ¶¶ 22, 23, and 24; FIG. 1, Nos. 135, 110, 112, 114, 116, 118, 120, 122, 124, and 126).

Independent Claim 18

In another embodiment, as recited in independent claim 18, a method of processing signals at an infrastructure node for a wireless network (FIG. 1, Nos. 100, 116, 135) includes receiving a transmitted signal from a wireless node (p. 3, lines 28-30, ¶ 14; FIG. 1, Nos. 110, 112, 114, 116, 118, 120, 122, 124, and 126; p.4, lines 16-17, ¶ 16). The method also includes

receiving the signals from other independent infrastructure nodes representative of the transmitted signal from the wireless node (p. 6, lines 25-27, ¶ 24; FIG. 4, Nos. 410, 420, 430). The method further includes combining the signal received from the wireless node and the signals from the other independent infrastructure nodes to estimate the signal transmitted by the wireless node (p.5, lines 27-28, ¶ 21; p.6, lines 6-22, ¶¶ 22, 23, and 24; FIG. 1, Nos. 135, 110, 112, 114, 116, 118, 120, 122, 124, and 126).

Independent Claim 19

In another embodiment, as recited in independent claim 19, a method of processing signals in a network having multiple independent infrastructure nodes and multiple nodes (FIG. 1, Nos. 100, 140, 142, 144, 146, 148, 150, 152, 154, 110, 112, 114, 116, 118, 120, 122, 124, and 126) includes transmitting a signal from a first wireless node (p. 1, line 23, ¶ 3; FIG. 1, Nos. 140, 142, 144, 146, 148, 150, 152, and 154). The method also includes receiving the transmitted signal, wherein at least two infrastructure nodes receive the transmitted signal from the single first wireless node (p. 3, lines 28-30, ¶ 14; FIG. 1, Nos. 110, 112, 114, 116, 118, 120, 122, 124, and 126; p. 4, lines 16-17, ¶ 16). The method further includes combining the signals received by at least two of the multiple independent infrastructure nodes to estimate the signal transmitted by the single first wireless node (p. 5, lines 27-28, ¶ 21; p. 6, lines 6-22, ¶¶ 22, 23, and 24; FIG. 1, Nos. 135, 110, 114, 116, 118, 120, 122, 124, and 126).

This summary does not provide an exhaustive or exclusive view of the present subject matter, and Appellant refers to each of the appended claims and its legal equivalents for a complete statement of the invention.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 10, 16, 17, 18, and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Holdrege et al. (U.S. Patent NO. 6,845,087) in view of Fuerter (U.S. Patent No. 6,125,109).

7. ARGUMENT

A. The Applicable Law Under 35 U.S.C. § 103(a)

A patent may not be obtained for an invention, even though the invention is not identically disclosed or described in a single patent or other publication, if the differences between the subject matter of the invention and the prior art are such that the subject matter as a whole would have been obvious at the time that the invention was made to a person having ordinary skill in the art to which the subject matter of the invention pertains.[1] An obviousness analysis under § 103 is objective. That is, the scope and content of the prior art are determined, the differences between the prior art and the claims at issue are ascertained, and the level of ordinary skill in the pertinent art is resolved. It is against this background that the obviousness or nonobviousness of the subject matter is determined. Other considerations such as commercial success, long felt but unsolved need, and the failure of others might be utilized to shed light on the circumstances surrounding the origin of the subject matter sought to be patented.[2] While the obviousness analysis need not seek out precise teachings directed to the specific subject matter of a claim, the analysis should nevertheless be explicit, including some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness, and not based on mere conclusory statements.[3] An indication of a teaching, suggestion, or motivation in the prior art may be part of this analysis, since there is no necessary inconsistency between the idea underlying the teaching, suggestion, and motivation test and the *Graham* analysis. However, the general principle of the teaching, suggestion, and motivation test should not be transformed into a rigid rule that limits the obviousness inquiry.[4] Rather, the approach to the determination of obviousness or nonobviousness should remain expansive and flexible.[5] And further while there is a need for caution in granting a patent based on a combination of elements found in the prior art,[6] a patent composed of several elements is not proved obvious merely by showing that each

---

[1] 35 U.S.C. § 103(a).
[2] *KSR International Co. v. Teleflex Inc.*, 550 U.S. ____ , p. 2 slip opinion (2007), *citing Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 15-17 (1966).
[3] *Id.*, p.14, *citing In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).
[4] *Id.*, p. 15.
[5] *Id.*, p. 11.
[6] *Id.*, p.11.

of its elements was, independently, known in the prior art. Therefore, it can be important to identify a reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does.[7]

B. The Rejection of Independent Claims 1, 10, 16, 17, 18, and 19 under 103(a)

The Final Office Action of June 29, 2007 rejected claims 1, 10, 16, 17, 18, and 19 under 35 U.S.C. § 103(a) as being unpatentable over Holdrege et al. (U.S. Pat. No. 6,845,087) in view of Fuerter (U.S. Patent No. 6,125,109). The Final Office Action contends that the features of the claims are written such that the claims read on the cited references. The Appellant respectfully disagrees.

On page 2, the Final Office Action states that the Holdrege reference discloses multiple nodes. Being that as it may, an obvious analysis under *Graham* requires more than identifying certain elements in a reference. Rather, a proper *Graham* analysis requires one to determine the scope and contents of the prior art, and ascertain the differences between the prior art and the claimed subject matter. Determining the differences between the prior art and the claimed subject matter requires some analysis as to what the prior art teaches about certain elements, not just that certain elements are disclosed by the prior art.[8]

Specifically, it is unremarkable that Holdrege refers to communication networks that may have multiple users or nodes. However, it is remarkable and pertinent that Holdrege does not disclose that, among these multiple users and nodes, there exists a single wireless node that transmits a signal that is received by a least two infrastructure nodes as recited in the claimed subject matter.

Notwithstanding this absence in Holdrege, the Final Office Action contends that a single wireless node that transmits a signal that is received by at least two infrastructure nodes is disclosed in Holdrege in the Abstract, at column 2, lines 64-67, and at column 3, lines 1-12, 30-39, and 50-59. The Appellant respectfully disagrees with this contention. The Abstract relates only to a type A node that transmits a signal during a transmit window and receives a signal

---

[7] *Id.*, pp. 14-15.

[8] *See KSR International Co. v. Teleflex Inc. et al.*, slip opinion, April 30, 2007, p. 15 ("it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.").

during a receive window, and a type B node that adopts the opposite transmit and receive timing as the type A node. At column 3, lines 2-7, the Holdrege reference specifically states that "[t]he source node may then transmit over a first spread spectrum (e.g., CDMA) line during the source node transmit window to a destination node." As this statement indicates, Holdrege teaches the transmission of a signal from a single transmit node to a single destination node. There is simply no mention here of a single first wireless node that transmits a signal to at least two infrastructure nodes as recited in the claims. At column 3, lines 30-39, Holdrege mentions that hubs may support multiple links between users. However, that a hub may support multiple users via multiple links is not a disclosure of two or more infrastructure nodes, or even two or more hubs, receiving a signal from a first wireless node.

The Final Office Action admits that the Holdrege reference does not disclose a "module that combines at least two of the signals received at the multiple independent infrastructure nodes to estimate the signal transmitted by the single first wireless node." The Final Office Action however contends that the Fuerter reference discloses this feature. The Appellant respectfully disagrees.

Fuerter relates to a single repeater that receives an incoming signal, and processes that incoming signal in two processing paths within that single repeater. There is no disclosure in Fuerter of a module that combines at least two signals received at multiple independent infrastructure nodes. Consequently, the Fuerter reference does not fill the gap in the Holdrege reference. Indeed, if one of skill in the art was to combine the Holdrege and Fuerter references, the result would be a communication network with a transmit node and a receive node that transmits and receives signals during respective transmit and receive windows, and in which at the transmit node and/or at the receive node a received signal is processed in two processing paths. This is a much different teaching than the claimed subject matter of a single first wireless node that transmits a signal to at least two infrastructure nodes.

SUMMARY

For the reasons argued above, claims 1, 10, 16, 17, 18, and 19 were not properly rejected under § 103(a) as being unpatentable over Holdrege in view of Fuerter. It is respectfully submitted that the art cited does not render the claims obvious, and that the claims are patentable over the cited art. Reversal of the rejection and allowance of the pending claims are respectfully requested.

Respectfully submitted,

SCHWEGMAN, LUNDBERG & WOESSNER, P.A.
P.O. Box 2938
Minneapolis, MN 55402

Date January 29, 2008 By

David D. Zuriff
Reg. No. 36,776

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 29th day of January 2008.

Dawn M. Pope
Name

Dawn M. Pope
Signature

8. CLAIMS APPENDIX

1. A wireless network comprising:

multiple first wireless nodes that transmit signals;

multiple independent infrastructure nodes that receive the transmitted signals, wherein at least two infrastructure nodes receive a transmitted signal from a single first wireless node; and

a module that combines at least two of the signals received at the multiple independent infrastructure nodes to estimate the signal transmitted by the single first wireless node.

10. An infrastructure node for a wireless network, the infrastructure node comprising:

a first receiver that receives a transmitted signal from a wireless node;

a second receiver that receives signals from other independent infrastructure nodes representative of the transmitted signal from the wireless node that were received by the other independent infrastructure nodes; and

a module that combines signal received from the wireless node and the signals from the other independent infrastructure nodes to estimate the signal transmitted by the wireless node.

16. A infrastructure node for a wireless network, the infrastructure node comprising:

means for receiving a transmitted signal from a wireless node;

means for receiving the signals from other independent infrastructure nodes representative of the transmitted signal from the wireless node; and

means for combining the signal received from the wireless node and the signals from the other independent infrastructure nodes to estimate the signal transmitted by the wireless node.

17. A wireless network comprising:

means for transmitting low power wireless signals;

multiple means for receiving the transmitted signals, wherein at least two of such means receive a transmitted signal from a single first wireless node; and

means for combining at least two of the signals received at the multiple means for receiving the transmitted signals for estimating the signal transmitted by the single first wireless node.

18. A method of processing signals at a infrastructure node for a wireless network, the infrastructure node performing the method comprising:

receiving a transmitted signal from a wireless node;

receiving the signals from other independent infrastructure nodes representative of the transmitted signal from the wireless node; and

combining the signal received from the wireless node and the signals from the other independent infrastructure nodes to estimate the signal transmitted by the wireless node.

19. A method of processing signals in a network having multiple independent infrastructure nodes and multiple nodes, the method comprising:

transmitting a signal from a first wireless node;

receiving the transmitted signal, wherein at least two infrastructure nodes receive the transmitted signal from the single first wireless node; and

combining the signals received by at least two of the multiple independent infrastructure nodes to estimate the signal transmitted by the single first wireless node.

9. EVIDENCE APPENDIX

None.

10. RELATED PROCEEDINGS APPENDIX

None.